ABSTRACT

Computer animators have, till now, largely relegated themselves to using point light sources when simulating directional light sources in computer graphics and animation. The illumination achieved is computationally feasible but not totally realistic. While it is possible to use a finite light source of given size and shape to achieve a more realistic effect, the radiosity

5   analysis required to calculate the illumination effect of such a light source is so cumbersome that it cannot be used for real-time computer animation. The described invention allows the animator to approximate the illumination effect of a finite light source by using a point source of varying location and intensity. Another embodiment of the invention allows the animator to realistically simulate ambient light by a similar method. The resulting illumination effects are comparable to

10   those achieved with full radiosity analyses at much lower computational loads.